SHORTER NOTE

FLAVONOID CHEMISTRY OF THE NORTH AMERICAN LYCOPODIUM OBSCURUM COMPLEX.—The Lycopodium obscurum complex is taxonomically difficult because of environmental effects on the subtle characters used to distinguish the taxa. A major problem has been whether to recognize as distinct the species *L. dendroideum* Michaux (Hauke, Bioscience 19:705–707. 1969). Using phyllotaxy, Hickey (Amer. Fern J. 67:45–48. 1977) re-defined *L. obscurum* L. var. *obscurum* and the problematic *L. dendroideum* and described another taxon, *L. obscurum* var. *isophyllum*. The current study of flavonoid chemistry was initially undertaken to provide an independent source of evidence regarding the status and relationships of these taxa.

Material for flavonoid analysis was collected from natural populations, and voucher specimens are on deposit at TENN. From each taxon, 50 g of vegetative tissue and 5 g of reproductive tissue (spores, sporophylls and strobilus axes) were extracted 2 or 3 times in 85% methanol for at least 24 hrs. Isolation by paper chromatography and identification by UV-spectral analysis for flavonoids followed the general procedures as outlined by Mabry, Markham and Thomas (The Systematic Identification of Flavonoids, 1970). The identity of the flavonoids was confirmed by co-chromatography with authentic compounds on cellulose-TLC.

Flavonoids were found to be absent in the vegetative material of all three taxa. In the reproductive tissue, however, chrysoeriol was uniformly present. Chrysoeriol has been found commonly throughout the genus *Lycopodium sensu lato*, according to Voirin and Jay (Biochem. Syst. Ecol. 6:95–97. 1978). Localization of flavonoids solely in reproductive tissues has not been previously reported for the fern allies. The function of this localization is unknown. Since all three taxa had identical flavonoid characteristics, flavonoid chemistry does not distinguish among them. Thanks are due to R. James Hickey for kindly confirming the identity of the voucher material.—*Frank Fusiak, Department of Botany, University of Tennessee, Knoxville, TN 37996-1100.*

Contributions from the Botanical Laboratory, The University of Tennessee, n.s. No. 542.